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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,498	06/11/2001	Jeffrey A. McKelvey	01SW102	3072

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EXAMINER 1

PESIN, BORIS M

ART UNIT PAPER NUMBER

2174

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/878,498

Applicant(s)

MCKELVEY ET AL.

Examiner

Boris Pesin

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Amendment A, filed 2/2/2004.
2. Claims 1-2, 4-22, and 24-31 are pending in this application. Claims 1, 14, 21, and 30 are independent claims. In the Amendment A, Claims 1-2, 4-6, 8-11, 13-18, 20-22, 24, and 26-31 were amended, and claims 3 and 23 were canceled. This action is made Final.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 2, 4-7, 9, 14, 15, 21, 22, 24, 25, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammack et al. (US 6449624) in view of Schultz et al. (US 5812133).

In regards to claim 1, Hammack teaches a graphical compare utility system for displaying control programs for industrial control modules (column 1, lines 36-50 and column 25, lines 8-12, *a graphical comparison user interface to compare instruction sets*), the system comprising: a conversion system operable to receive a first and a second control program and convert the first and second control program into a first and second data set representing individual instruction of the first and second control program (column 21, lines 33-41, *i.e. – translation*); and a viewing system operable to accept the first and second data sets and provide a graphical view of the first and second control programs in a single view based on the first and second binary data sets (column 24, lines 19-25). Hammock does not explicitly disclose that the first and second control programs being a first ladder logic program and a second ladder logic program. However, Hammock does disclose a means to graphically compare control programs using blocks and lines that represent the sequential input and output of data to control devices (column 1, lines 36-50). Schultz teaches that the first and second control programs being a first ladder logic program and a second ladder logic program (column 1, lines 21-25 and column 16, lines 13-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Hammock with a means to specifically display ladder logic control programs, as taught by Schultz, with a motivation to provide an intuitive and simple way to analyze the operation of ladder logic control programs (columns 2-3, lines 65-3).

Claim 21 is similar in scope to claim 1, and is therefore rejected under similar rationale.

In regards to claim 2, Hammack and Shultz teach all the limitations of claim 1. Hammack further teaches the graphical utility system providing indicators for insertions, deletions, modifications and moves of individual instructions between the first and the second ladder logic control program (column 24, lines 35-52).

Claim 22 is similar in scope to claim 2, and is therefore rejected under similar rationale.

In regards to claim 4, Hammack and Shultz teach all the limitations of claim 1. Hammack does not teach the individual instruction being rungs of the first and second ladder logic programs. Schultz teaches the individual instruction being rungs of the first and second ladder logic programs (column 16, lines 13-19).

In regards to claim 5, Hammack and Shultz teach all the limitations of claim 1. Hammack further teaches a difference module operable to determine differences between the first and the second ladder logic control programs and provide a difference data structure representing the differences between the first and second ladder logic control program (column 21, lines 60-65, *data defining differences is stored*).

Claim 24 is similar in scope to claim 5, and is therefore rejected under similar rationale.

In regards to claim 6, Hammack and Shultz teach all the limitations of claim 5. Hammack further teaches a comparison module operable to receive the difference data structure and the first and second ladder logic control programs and generate a plurality of comparison scenarios to provide a plurality of comparison set views (column 24, lines 5-18, *a plurality of views can be generated*, and column 25, lines 37-40).

Claim 25 is similar in scope to claim 6, and is therefore rejected under similar rationale.

In regards to claim 7, Hammack and Shultz teach all the limitations of claim 6. Hammack further teaches a decision model operable to determine an optimal display set view from the plurality of comparison set views (column 23, lines 57-60, *the optimal view is determined based on the graphical or textual nature of the comparison data*, and column 25, lines 37-40).

In regards to claim 9, Hammack and Shultz teach all the limitations of claim 7. Hammack further teaches the decision model transmitting the optimal display set view to a viewing component, the viewing component mapping the optimal display set view to graphic components associated with an operating system, such that the optimal display set view can be provided to a display system for providing a graphical representation of the first and second ladder logic control program in a single view (column 24, lines 10-13).

Claim 27 is similar in scope to claim 9, and is therefore rejected under similar rationale.

As per independent claim 14, Hammack teaches a graphical utility system for displaying two control programs for industrial control modules in an adjacent configuration (column 25, lines 8-12, *a graphical comparison user interface to compare instruction sets*, and column 1, lines 36-50, *i.e. – a sequential follow chart having a series of interconnected blocks representative of input and output relationships*), the system comprising: a conversion system operable to receive a first and a second

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control program and convert the first and second control program into a first and second binary data set representing individual rungs of the first and second control program (column 21, lines 33-41, *i.e. – translation*); a difference module for determining differences between the first and the second binary data set and providing a difference data structure representing the differences between the first and second control programs (column 21, lines 60-65, *data defining differences is stored*); a comparison module operable to receive the difference data structure and the first and second control programs and generate a plurality of comparison scenarios to provide a plurality of comparison set views (column 24, lines 5-18, *a plurality of views can be generated*, and column 25, lines 37-40); a decision model operable to determine an optimal display set view from the plurality of comparison set views (column 23, lines 57-60, *the optimal view is determined based on the graphical or textual nature of the comparison data*, and column 25, lines 37-40); and a viewing system operable to accept the optimal display set view and provide a graphical view of the first and second control programs in an adjacent configuration (column 24, lines 10-13). Hammock does not explicitly disclose that the control programs being compared are ladder logic programs. Schultz teaches that it is known to display ladder logic programs so as to manipulate and update them (column 1, lines 21-25 and column 16, lines 13-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Hammock with a means to specifically display ladder logic control programs, as taught by Schultz, with a motivation to provide an intuitive and simple way to analyze the operation of ladder logic control programs (columns 2-3, lines 65-3).

As per claim 15, which is dependent on claim 14, Hammock teaches that the graphical utility system providing indicators for insertions, deletions, modifications and moves of individual rungs between the first and the second ladder logic control program (column 24, lines 35-52).

As per independent claim 30, Hammock teaches a system for displaying graphical representations of two control programs for industrial control modules in an adjacent configuration (column 1, lines 36-50 and column 25, lines 8-12, *a graphical comparison user interface to compare instruction sets*), the system comprising: means for converting the first and second control program into a first and second data set representing individual rungs of the first and second control program (column 21, lines 33-41, *i.e. – translation*); means for determining the differences between the first and second control program based on the first and second data sets (column 21, lines 60-65, *data defining differences is stored*); means for determining an optimal display set view based on the differences between the first and second control program (column 23, lines 57-60, *the optimal view is determined based on the graphical or textual nature of the comparison data*, and column 25, lines 37-40); and means for displaying the optimal display set view as a graphical view of the first and second control program, the means for displaying the optimal display set view providing indicators in the graphical view representing differences between the first and second control program (column 24, lines 10-13). Hammock does not explicitly disclose that the first and second control programs being a first ladder logic program and a second ladder logic program. However, Hammock does disclose a means to graphically compare control programs

using blocks and lines that represent the sequential input and output of data to control devices (column 1, lines 36-50). Schultz teaches that the first and second control programs being a first ladder logic program and a second ladder logic program (column 1, lines 21-25 and column 16, lines 13-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Hammock with a means to specifically display ladder logic control programs, as taught by Schultz, with a motivation to provide an intuitive and simple way to analyze the operation of ladder logic control programs (columns 2-3, lines 65-3).

Claims 10, 12, 17, 19, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammack et al. ("Hammack," US 6449624) in view Schultz et al. (US 5812133) in further view of Microsoft Notepad ("MS Notepad," pages 1-2).

As per claim 10, which is dependent on claim 1, the teachings of Hammack and Shultz in regards to claim 1 have been discussed above. Hammock and Shultz do not disclose a recursion tool to provide wrapping of the graphical view of the first and second ladder logic control program, such that instructions of the ladder logic control programs are wrapped in corresponding panes of a single frame window to avoid clipping of the instructions. MS Notepad teaches wrapping of information to avoid the clipping of information (figures 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Hammack and Shultz with a means to wrap the control programs so as to avoid the clipping of instructions with the motivation to allow the viewer to see all information without needing to scroll the window.

Claims 28 and 31 are similar in scope to claim 10, and are therefore rejected under similar rationale.

As per claim 12, which is dependent on claim 10, MS Notepad teaches the recursion tool having an enabled state and a disabled state (figure 3, *enable or disable text wrapping*).

As per claim 17, which is dependent on claim 14, the teachings of the combination of Hammock and Schultz in regards to claim 14 have been discussed above. The combination of Hammock and Schultz does not disclose a recursion tool to provide wrapping of the graphical view of the first and second control program, such that rungs of the control programs are wrapped in corresponding panes of a single frame window to avoid clipping of the instructions. MS Notepad teaches wrapping of information to avoid the clipping of information (figures 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the combination of Hammock and Schultz with a means to wrap the control programs so as to avoid the clipping of instructions with the motivation to allow the viewer to see all information without needing to scroll the window.

As per claim 19, which is dependent on claim 17, MS Notepad teaches the recursion tool having an enabled state and a disabled state (figures 3, *enable or disable text wrapping*).

Claims 11, 18, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammack et al. ("Hammack," US 6449624) in view Schultz et al. (US 5812133) in view of Microsoft Notepad ("MS Notepad," Pages 1-2), and further in view of Microsoft Word ("MS Word," pages 1-2).

As per claim 11, which is dependent on claim 10, the teachings of the combination of Hammack, Shultz and MS Notepad in regards to claim 10 have been discussed above. The combination of Hammack, Shultz, and MS Notepad does not disclose that the recursion tool is coupled to window resizing and zooming features of the graphical compare utility system, such that the graphical view of the first and second ladder logic control programs is dynamically adjusted when at least one of window resizing and zooming is invoked. MS Word teaches that the recursion tool being coupled to window resizing and zooming features of the graphical compare utility system, such that the graphical view of the first and second control programs is dynamically adjusted when at least one of window resizing and zooming is invoked (figures 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the combination of Hammack, Shultz, and MS Notepad with a means to dynamically adjust window resizing and zooming, as taught by MS Word, with the motivation to provide the optimal view in relation to the viewable space of the display region.

Claim 29 is similar in scope to claim 11, and is therefore rejected under similar rationale.

As per claim 18, which is dependent on claim 17, the teachings of the combination of Hammack, Schultz, and MS Notepad in regards to claim 17 have been discussed above. The combination of Hammack, Schultz, and MS Notepad does not disclose that the recursion tool is coupled to window resizing and zooming features of the graphical compare utility system, such that the graphical view of the first and second control programs is dynamically adjusted when at least one of window resizing and zooming is invoked. MS Word teaches that the recursion tool being coupled to window resizing and zooming features of the graphical compare utility system, such that the graphical view of the first and second control programs is dynamically adjusted when at least one of window resizing and zooming is invoked (figures 2-4). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the combination of Hammack, Schultz, and MS Notepad with a means to dynamically adjust window resizing and zooming, as taught by MS Word, with the motivation to provide the optimal view in relation to the viewable space of the display region.

Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hammack et al. ("Hammack," US 6449624) in view Schultz et al. (US 5812133) in view of Microsoft Notepad ("MS Notepad," pages 1-2), and further in view of SnagIt Version 5.0 ("SnagIt," distributed by TechSmith Corporation, www.techsmith.com).

As per claim 13, which is dependent on claim 10, the teachings of the combination of Hammack, Shultz, and MS Notepad in regards to claim 10 have been

discussed above. The combination of Hammack, Shultz, and MS Notepad does not disclose the recursion tool being operable to provide a printout of the graphical view of all or a portion of the first and second ladder logic control program. SnagIt teaches a tool being operable to provide a printout of the graphical view of the first and second control program (page 1, §Capture Destinations, *any screen can be captured and sent to the printer for printing*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the combination of Hammack, Shultz, and MS Notepad with a means to print the graphical view of the control programs, as taught by SnagIt, with the motivation to allow the user to view, check, and save hard copies of the control programs.

As per claim 20, which is dependent on claim 17, the teachings of the combination of Hammack, Schultz, and MS Notepad in regards to claim 17 have been discussed above. The combination of Hammack, Schultz, and MS Notepad does not disclose the recursion tool being operable to provide a printout of two side-by-side graphical views of all or a portion of the first and second control program. SnagIt teaches a tool being operable to provide a printout of the graphical view of the first and second control program (page 1, §Capture Destinations, *any screen can be captured and sent to the printer for printing*). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of the combination of Hammack, Schultz, and MS Notepad with a means to print the graphical view of the control programs, as taught by SnagIt, with the motivation to allow the user to view, check, and save hard copies of the control programs.

Allowable Subject Matter

Claims 8, 16, and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach choosing two documents to compare based on maximizing the number of instruction matches between documents wherein the instructions are programming instructions.

Response to Arguments

Applicant's arguments filed 06/21/2004 have been fully considered but they are not persuasive.

The applicant argues:

- a. Shultz is not citable prior art with respect to the present application.
- b. Hammack et al. fails to describe moved instructions.
- c. Hammack et al. fails to describe generating a plurality of comparison scenarios from the set of differences to provide a plurality of comparison set views.
- d. Microsoft Notepad is not capable and does not teach wrapping of a graphic view of instructions.
- e. SnagIt does not show all or a portion of the first and second control programs.

In regards to argument (a), Shultz can be used as a valid reference because Shultz was published on September 22, 1998; therefore it would qualify as prior art under subsection (b) of section 102.

In regards to argument (b), Hammack does show moved instructions. Instructions that have been added or deleted are moved instructions. Therefore by showing insertions and deletions, he is showing the moving of instructions.

In regards to argument (c), Hammack clearly describes generating a plurality of comparison scenarios from the set of differences to provide a plurality of comparison set views. In figure 16, the user has several different options, elements 226, 228, and 230, in order to generate a plurality comparison set views.

In regards to argument (d), Microsoft Notepad clearly teaches wrapping of a graphic view of instructions. Since the instructions are just text, they wrap around in a similar fashion to the method illustrated in Microsoft Notepad.

In regards to argument (e), SnagIt clearly shows all **or** a portion of the first and second control programs. Since SnagIt show at least a portion of the programs, as admitted by the applicant in his arguments, it clearly meets the limitation of showing "all or a portion" of the programs (Emphasis added).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Pesin whose telephone number is (571) 272-4070. The examiner can normally be reached on Monday-Friday, 9:00AM - 6:00PM, except every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BP

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